

REMARKS

Claims 1-4, 6-10, 12 and 14 have been rejected as obvious over Downes in view of Metcalf. Downes' panel, elements 4-10, is not linear and vertically extending. It is noted that claims 1 and 14 have been amended to recite that the panel is "planar" and not "generally planar." This limitation in the claims clearly avoids the Downes alleged panel. The examiner says that it would have been obvious to incorporate the characteristics of Downes into a linearly and vertically extending panel. However, not only does this suggestion come from applicant's teachings, but such a modification of the panels 4 to 10 of Downes (the examiner argues that the entire device disclosed in Figs. 1 to 3 is a generally planar panel) completely destroys the teachings of Downes and what vanes 4 and mesh 10 accomplish. How could the water droplets imported from the wheel pass into the vanes 4 along with the air passing through mesh 10 and enter passage 6 if the vanes and mesh were planar panels? There would be no change in forward movement to a centrifugal action by channels 7 separating the air and water with the water falling into gutter 9.

The examiner also argues that applicant relies on the adaptability of its product to a pre-existing vehicle. New claims 15 and 16 clearly are addressed to this feature of applicant's invention. Claim 15 clearly recites that the panel is vertical and planar and vertically behind and spaced from a vehicle wheel below the wheel arch. Claim 16 recites that the panel is vertical and planar and mounted behind a vehicle wheel and spaced from a vehicle wheel and below the wheel arch. This is clearly not shown or suggested in Downes alone, or in view of Metcalf.

Downes' panel elements 4-10, are not linear and vertically extending. It is not below the wheel arch but actually a part thereof. It is well known that, in the automotive art, OEM manufacturers do not easily adapt the products of others outside of the manufacturing company that may improve the product. Applicant's invention can be adapted to a pre-existing vehicle by mounting the same behind a vehicle wheel, below the wheel arch and spaced therefrom. This is not shown or suggested in Downes. There are no vertically extending passageways.

Downes' wheel guard construction actually replaces a standard OEM wheel arch. The wheel guard construction has a forward air ingress mesh and curved vanes that cover a substantial circumferential portion of the wheel. In contrast, new claims 15 and 16 recite a device and method comprising a generally planar panel that is to be mounted substantially vertically behind a vehicle wheel and below the wheel arch. Applicant submits that Downes does not teach or suggest all of the elements and limitations of new claims 15 and 16. These claims are not obvious over Downes in view of Metcalf and are thus patentable under 35 USC § 103.

A standard wheel arch that does not have a forward air ingress mesh also does not have the associated ingress of air. Therefore, the airflow characteristics and resulting spray formation and properties in a standard wheel arch are very different than the specifically designed wheel guard of Downes. Since air flow within a wheel arch environment is transient, turbulent, and complex, the outcome of any design change is inherently unpredictable. Applicant's claims teach a device comprising a generally linear and vertically extending planar panel that specifically addresses the airflow characteristics associated with a standard wheel arch. It would not be obvious for one skilled in the art to arrive at the design of applicant's device without relying on applicant's teachings.

Applicant submits that none of the cited references in any combination teach or suggest all of the elements and limitations of independent claims 1, 14, 15 and 16, and the claims dependent therefrom are not obvious and the are therefore patentable under USC § 103.

It is noted that claim 13 is now dependent from claim 1, which should be allowable. The examiner's argument that claim 13 contains subject matter not described in the specification as to enable one skilled in the art to make and/or use the invention is not understood. The examiner's attention is directed to the text on page 4 of the specification, which clearly supports the language in claim 13.

Furthermore, as described on page 1, lines 17-22 of applicant's specification,

“it has been found that [the arched wheel guard arrangement of Downes] does not work since, when the vehicle is travelling at speed, air is forced into the upper area of the channels creating a back pressure in the channels by travelling down the pockets which prevents the spray from entering the channels.”

Applicant teaches in claim 14, a method, and in claim 1, a device, comprising a linear and vertically extending planar panel that is mounted vertically behind a vehicle wheel and below the wheel arch located in a standard wheel arch environment. By teaching a device that is planar and mounted vertically behind the wheel, applicant eliminates the flow characteristic problem of sprays not entering the channels, which is clearly not obvious and not addressed by Downes.

The fender flaps as taught in Metcalf suppress spray by absorbing the impact energy of the water spray and redirecting the water, as shown in Figs. 2A and 2B. There is not teaching or suggestion of reducing spray with a device that separates air from the pulverized water emissions. Therefore, Metcalf does not take into consideration the airflow characteristics in the wheel arch of a moving vehicle. Thus combining Downes and Metcalf does not address the specific airflow characteristics and resulting spray formation and properties in a standard wheel arch. Furthermore, without Applicant's teachings, it would not be obvious to one skilled in the art that combining Downes and Metcalf would overcome the flow characteristic problem associated with the device as taught by Downes.

In conclusion, the device shown in elements 4-10 in Downes is not generally planar. The curved air ingress mesh 10, and indeed most of the baffles, are not mounted vertically behind a wheel. Only the lowermost portions of the vanes are mounted behind the wheel.

Downes wants to provide a wholly new type of wheel guard, which is to be used in place of existing arrangements; the new wheel guard having a curved forward air ingress mesh 10 in association with a curved arrangement of rear vanes 4, 5. Metcalf wants to apply a planar flap with an existing wheel guard arrangement. In this regard, it is similar to the present arrangement in that it is intended to reduce spray caused by the turbulent flow in existing wheel arrangements.

Downes, however, cannot be used, nor was it intended to be used, in an existing wheel arch because the entire aim of Downes is to provide a completely new type of wheel arch in which the air flow is substantially different and which reduces spray without need for further devices to be attached. One skilled in the art would immediately appreciate that Downes and Metcalf are not disclosures that could be readily combined because they approach the problem of vehicle spray reduction in opposite directions. Metcalf seeks to address the complex turbulent flow in existing wheel arrangements whereas Downes seeks to address the problem with a complete redesign of a wheel guard in which the airflow is substantially altered. Why would a product designed for an existing complex turbulent airflow be considered suitable for combination with an alternative wheel guard in which the airflow is clearly going to be completely different? That is not a logical argument.

The whole point of Downes is to provide curved vanes/ingress mesh to replicate the form of a known wheel arch arrangement and thereby Downes teaches away from a vertically extending planar panel. With regard to claims 2-4, 6-10 and 12, paragraph 4 of page 2 of Downes merely states that water is exited from either end of the gutter 9 and deposited on the roadway. This is relevant to the features of claims 2-4, 6-10 and 12.

The linearly and vertically extending panels of the prior art are only used in conjunction with known wheel arrangements which have particular airflow characteristics. Downes, however, teaches a new non-standard wheel arch arrangement having different airflow characteristics. It would not, therefore, be obvious to seek to combine, especially as the vanes of Downes are specifically disclosed as being curved so as to form a wheel arch and even then only in conjunction with a forward air ingress mesh.

It is not mere speculation that the airflow characteristics of the Downes wheel arch are different to those found in known wheel arrangements. The aim of the Downes invention was to create an entirely new wheel arch to be used in place of known arrangements. A standard wheel arch is generally semi-circular and is impervious to air. Downes, however, has a forward air ingress mesh instead of a solid portion and has curved vanes at the rear, again instead of solid

material. It would be clear to an engineer and not just a person skilled in the field of vehicle technology that this would cause a significant change in airflow dynamics. Given the two different starting points regarding the wheel environments, a person skilled in the art would not seek to combine the teachings of Downes and Metcalf and would certainly not arrive at the present invention without a considerable degree of hindsight. It is not within the level of ordinary skill to convert the entire wheel arch of Downes into a bolt-on spray suppression device because there are too many features of Downes which have to be omitted, straightened, shortened and then moved to a location for which the original wheel arch was not designed. The examiner's reasoning includes knowledge gained solely from the applicant's own disclosure and, in particular, the knowledge that the Downes arrangement was not sufficiently effective. Without this knowledge there would be no inspiration to seek to improve the Downes arrangement although the term 'improve' is somewhat misplaced as the present invention is not an improvement on the Downes construction per se. Rather, it is a stand-alone product which is to be used in conventional wheel arrangement rather than with the radically re-designed wheel arch of Downes.

It is not just the differing structures of Downes and Metcalf but also the differing end uses which would make the possibility of combination remote at best. One product, Metcalf, is for attachment to existing wheel guard arrangement whilst the other is a complete stand-alone replacement wheel guard which was clearly intended to be used without additional elements (such as the Metcalf flaps). Hence, the Downes arrangement terminates in a gutter for lateral deposit of water. It is not a simple substitution as stated by the examiner because Downes only teaches the "techniques of passages, pockets and so on" in the form of a semi-circular wheel arch which specifically incorporates a forward air ingress mesh (see claim 1 of Downes) in order to function as designed.


Surely it can only be an unreasonable level of hindsight to take the Downes construction, ignore the essential features of an air ingress mesh and curved vanes, make the vanes planar and shorter, then attach them to a known wheel guard of the type that the Downes construction was actually designed to replace.

Conclusion

It is respectfully submitted that all of the Examiner's objections have been successfully traversed and that the application is now in order for allowance.

The Director is authorized to charge any additional fee(s) or any underpayment of fee(s), or to credit any overpayments to **Deposit Account Number 50-2638**. Please ensure that Attorney Docket Number 102965-010100 is referred to when charging any payments or credits for this case.

Respectfully submitted,


Louis J. Bovasso

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GREENBERG TRAURIG, LLP
2450 Colorado Avenue, Suite 400E
Santa Monica, CA 90404
Phone: (310) 586-7700
Fax: (310) 586-7800
E-mail: laipmail@gtlaw.com
LA 128953279v1